Contribution ID: **1881** Type: **Poster**

MULTIFUNCTIONAL SYSTEM FOR DIAGNOSTICS AND ADJUSTMENT OF AMPLIFIER MODULES RF2-RF3 OF THE NICA COLLIDER

Monday 27 October 2025 18:30 (20 minutes)

The RF2 and RF3 amplifier complexes of the NICA collider are designed based on the modular principle, according to which the total output power is formed by summing the power of individual amplifier modules. One RF2 complex includes four amplifier cassettes, while eight such complexes are installed on two rings of the collider, which in total amounts to 32 modules. The structure of the RF3 system includes 16 amplifier systems, each of which contains 12 amplifiers, which leads to a total of 192 cassettes. This architecture necessitates the organization of a highly efficient system for operational diagnostics, routine maintenance and fine-tuning of amplifier modules aimed at ensuring that the RF station parameters correspond to the design requirements for heavy ion acceleration. As part of the solution to the problem of ensuring technical compliance and optimal adjustment of the operating parameters of the RF2 and RF3 amplifier cassettes, a multifunctional diagnostics and configuration system was designed and put into operation. The system concept was developed taking into account the specific requirements arising from the design and functional features of the above-mentioned amplifiers.

Author: КАРПУК, Александр

Co-authors: MALYSHEV, Alexander (JINR); MOROZOV, Dmitry (JINR); YABLOCHKIN, Michael (JINR); BROVKO, Oleg (JINR); MOROZOVA, Victoria (JINR)

Presenter: КАРПУК, Александр

Session Classification: Poster session & Welcome drinks

Track Classification: Accelerator Technologies and Neutron Sources